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30 April 1981

USSR Report

ECONOMIC AFFAIRS

(FOUO 5/81)

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PLANNING AND PLAN IMPLEMENTATION

METHODOLOGICAL INSTRUCTIONS FOR FIVE-YEAR PLAN EXAMINED

Moscow VOPROSY EKONOMIKI in Russian No 1, Jan 81 pp 110-118

[Article by M. Chistyakov: "Methodological Instructions for Compiling the 11th Five-Year Plan"]

[Text] In accordance with the decision of the June (1980) Plenum of the CPSU Central Committee, the 26th party congress will discuss the basic directions of the USSR economic and social development for the period 1981-1985. The central planning agencies with the participation of the ministries, departments, scientific organizations and the collectives of the associations and enterprises, in preparing for the congress, are intensely engaged in compiling prospects for further development of the country's economy, and in drafting major economic problems, special-purpose comprehensive programs and plans for development of the union and autonomous republics, krays, oblasts, rayons, cities, associations and enterprises.

The 11th Five-Year Plan, just as the previous long-term plans, is being compiled at all levels of the national economy on a common methodological basis. The great importance of developing methods and organization of planning was noted in the decree by the CPSU Central Committee and the USSR Council of Ministers "On Improving Planning and Strengthening the Influence of the Economic Mechanism on Increasing Production Efficiency and Work Quality." Guided by this decree, the USSR Gosplan jointly with other state committees, ministries, departments and the state planning agencies of the union republics has drafted and sent to the ministries, associations and enterprises more than 60 new methodological directions, instructions and other standard documents, including the Methodological Instructions for Drafting State Plans for USSR Economic and Social Development (March 1980).

The methodological instructions for compiling the state plans for economic and social development are based on common organizational and methodological principles for socialist planning developed by Marxist-Leninist theory and proven by many years of practice. They contain the procedures for compiling plans and methods for substantiating all sections of the five-year plan for the country's economic and social development as a single national economic complex. They are also used in drafting the basic directions for the ten-year period and the annual state plans. In the Methodological Instructions, special attention is paid to improving the methods for substantiating the social production efficiency indicators.

Growth in production efficiency, raising labor productivity, better utilization of fixed capital and production capacity, raw materials and physical resources, and

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intensification of production processes ensure the achievement of the highest results with the least outlays for physical and labor resources per unit of output.

The system of indicators in the Methodological Instructions has been refined in accordance with the instructions of the July (1979) decree by the CPSU Central Committee and the USSR Council of Ministers and the suggestions by the Institute of Economics of the USSR Academy of Sciences; this system of indicators is used in drafting plans to raise production efficiency for the national economy as a whole, the union republics, ministries, departments, associations and enterprises. Just as before, it is recommended that social production efficiency be planned according to the drafted system of indicators. The system of indicators for social production efficiency used in compiling the 10th Five-Year Plan has been supplemented with indicators that describe improvement in utilization of labor resources and fixed and working capital, the degree of introduction of new equipment and the development of external economic ties. Included among the generalizing is the indicator of the ratio of surplus product to the wage fund for workers engaged in physical production.

Indicators to more fully describe utilization of working capital have begun to be used; these are the indicator of production of social product (commodity production) per ruble of average annual value of working capital and the indicator of the ratio of increase in physical working capital to the increase in social product (commodity production). For analysis of the materials-intensiveness of social product by individual types of resources, it is recommended that indicators of input of major energy, physical and raw material resources in physical terms be calculated per ruble of social product (commodity production). Indicators of growth in labor productivity will be calculated on the basis of net output (normative), while in the 10th Five-Year Plan they were determined, as a rule, by commodity production.

Indicators describing the effectiveness of new equipment have been introduced for the first time in the Methodological Instructions for compiling the 11th Five-Year Plan. It is recommended that the estimate of the effectiveness of scientific and technical measures be made according to the value of the total annual economic effect obtained in the national economy from making use of achievements in science and technology. This indicator will be considered in the five-year plan as estimated and used to estimate the effect from introduction of new equipment.

A generalizing indicator describing the economic effect from introduction of new equipment is being introduced for the first time into the practice of planning the five-year and annual plans for enterprises, associations and ministries. This indicator will be the increase in profit, and in some sectors, the decrease in production cost through implementation of scientific and technical measures. Along with this, the generation of the consolidated cost accounting effect from output and use of new equipment will be planned. This indicator is the increase in profit from implementation of measures for new equipment less capital investment (one-time outlays) taking the normative factor ($E = 0.15$) into account. Included in the Methodological Instructions is a procedure for estimating and reflecting the economic effect from new equipment in the appropriate sections of the plans for enterprises, associations, ministries and departments, and in the state plans for the country's economic and social development as a whole. This will permit making an organic link between the drafted plans for development of science and technology and the basic sections of the plans: by production, labor, production cost and profit, capital construction and physical input.

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The increase in production in physical and monetary terms and in the percentage of products in the highest quality category in total production of them through introduction of new equipment is provided for in the plan for industrial production. In the section of the plan on labor under the same conditions are determined the increase in labor productivity and the relative savings in number of workers and the wage fund, and in the section on supply of materials and equipment--the savings in physical input. Results from introduction of measures in the plan for development of science and technology will begin to be considered in the applied norms and normatives of utilization of physical and labor resources and in the normatives of output-capital ratio and unit capital investment.

Needed refinements have also been introduced into the procedure for estimates of indicators of efficiency for industrial production. The estimates are to be based on new indicators, sanctioned in the five-year plan in accordance with the decree by the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979, including net output (normative), labor productivity for net output (normative), total profit, and in some sectors--reduction in production cost of output, output-capital ratio, indicators of average reduction of norms of input of major types of physical resources and others.

In the Methodological Instructions, it is recommended that efficient use of production apparatus be planned using engineering calculations and passports for production associations and enterprises. An important reserve for increasing capacity is improving equipment utilization through raising the shift system factor for its operation and eliminating intrashift losses. Acceleration of assimilation of capacity gained as a result of remodeling and expansion of operating and construction of new enterprises should be considered in plans.

A generalizing indicator describing utilization of production apparatus in industry is the output-capital ratio. It is recommended that this indicator be calculated separately for enterprises operating at the start of the five-year period and for those newly introduced in the plan period.

Estimates of the technical and economic indicators for utilization of equipment, machines and aggregates have to be made for detailed substantiation of plans to increase capacity of industrial enterprises. In the process, lists of these indicators defined by the ministries and associations and the specific character of production should be considered.

Agricultural production efficiency is planned at all levels on the basis of common principles and methods taking the peculiarities of this sector into account. Efficient use of land, all agricultural equipment and mineral and organic fertilizer, and raising crop yield and animal husbandry productiveness must be provided for in the plans. Growth in agricultural production efficiency is reflected first of all in the increase of output produced per hectare of land used with a reduction in total outlays for labor and physical resources per unit of output. The common indicators for agricultural production efficiency are: rates of growth of gross and net output, net income (profit), labor productivity, profitability, materials-intensiveness and capital-intensiveness. Efficient utilization of agricultural potential, it was stressed in the October (1980) Plenum of the CPSU Central Committee, is the most immediate way of solving the social problems of rural areas.

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In drafting plans for capital construction, special attention must be paid to effective use of capital investment. Resources must be directed first of all to technical reequipping and remodeling of operating enterprises, excesses in plans and estimates must be prevented, physical and labor resources must be concentrated in construction of major facilities and priority projects, uncompleted construction must be reduced and construction quality raised, new capacity must be put into operation and assimilated expeditiously, and dissipation of resources over numerous projects must be stopped.

Growth in effectiveness of industrial and agricultural production, capital investment and new equipment will be reflected in the system of progressive norms and normatives used in drafting and ensuring accomplishment of the plans. A major lever for raising production efficiency is the long-term economic normatives that will be sanctioned in the five-year plan starting with the 11th Five-Year Plan. Among them are: stable normative provisions for wages per ruble of output calculated by the indicator used for planning labor productivity; normative provisions for formation of funds for economic incentives (material incentives, sociocultural measures and housing construction and funds for production development) determined by quality indicators; normative provisions for deductions from profit; normative provisions for formation of a single fund for development of science and technology; quotas for average reduction of norms of input for the major types of physical resources and others.

Methods for substantiating proportional development of the economy are set forth more fully in the Methodlogical Instructions for compiling state plans for economic and social development. A major instrument in planning optimal proportions and ensuring a balanced national economy as a single economic complex is the system of balances, norms and normative provisions that will be drafted for each year of the five-year plan. In the five-year plan, special attention must be paid to balancing natural-physical ratios. As is known, these questions have always been the center of attention by planning agencies. The new method differs from the old in that the requirement for balanced plans by years of the five-year plan and by a broader products list has been significantly increased in it. In connection with this, the basic principles for organizing work on compilation of physical balances are given. Plans for distribution of products by holders of fixed capital will also be drafted now in the five-year plan. Depending on the purpose of the specific types of products in the national economy, the physical balances and plans for product distribution will be compiled by USSR Gosplan, USSR Gossnab, ministries, departments of the USSR and the councils of ministers of the union republics.

USSR Gosplan is charged with drafting physical balances and plans for distribution for products of intersector use--basic types of raw materials, materials, fuel and energy resources, machines and equipment, consumer goods--authorized in the state plans for USSR economic and social development. Regarding this, the USSR Gosplan will draft and present to the USSR Council of Ministers in the five-year plan for USSR economic and social development the balances of physical resources with a yearly distribution for about 410 types of products compared to the 234 designations in the 10th Five-Year Plan. In the process, the USSR Gosplan will compile plans for distribution of products by holders of fixed capital for the first time. From 65 to 85 percent of all resources are subject to distribution by holders of capital; this will permit associations and enterprises to expeditiously conclude long-term contracts for delivery of products.

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USSR Gossnab drafts the physical balances and distribution plans by years of the five-year plan for the major types of products of intersector use not being distributed by USSR Gosplan and the plans for production of which are approved by the USSR ministries and departments by agreement with the USSR Gossnab. USSR Gossnab and its agencies will draft balances (by years of the five-year plan) for almost 300 types of products compared to the 100 designations in the 10th Five-Year Plan. The USSR ministries and departments and the councils of ministers of the union republics draft the physical balances and plans for the list of products of intersector use distributed by them.

The procedure for compiling cost balances has been expanded significantly in the Methodological Instructions. For the first time, they include the procedure for compilation by the ministries and departments of five-year (with distribution by years) financial plans that will be given to the USSR Ministry of Finance for coordination. Five-year financial plans will be drafted for the first time also for production associations and enterprises.

The procedure has been refined for drafting and substantiating the country's aggregate financial balance; the USSR Ministry of Finance will present to the USSR Gosplan the estimates for the aggregate financial balance and suggestions for balancing it, and aggregate estimates (by basic indicators) of income and expenditure of the USSR State Budget for the five-year plan (with distribution by years). The aggregate financial balance drafted within the five-year plan for the country's economic and social development will be presented to the USSR Council of Ministers by the USSR Gosplan.

To ensure coordination by years of the five-year period, the procedure for calculating the balance of personal income and expenditure has been refined. This balance must be drafted by the USSR Gosplan and the planning agencies of the union republics for the five-year period and presented to the USSR Council of Ministers.

Needed refinements have been made to the Procedure for Drafting Five-Year and Annual Balances of Labor Resources; special attention is paid to improving estimates and substantiating balances of manpower and skilled personnel. It is recommended that measures to ensure full employment of the population capable of working be drafted and efficient utilization made of labor resources. To raise labor efficiency, a considerable increase in the mechanization of production has to be planned, labor organization improved, and personnel training improved. In the operating enterprises, growth in production volume must be ensured, as a rule, through raising labor productivity, that is, without increasing the number of workers, and in a number of cases by even reducing them.

Of great importance in coordinating the supply and demand of manpower are the aggregate balance of labor resources and the balance estimates of demand for training of skilled workers. The balance of labor resources and other balance estimates are drafted for the USSR as a whole, the union republics, krays and oblasts.

Along with the population at the age capable of working, manpower resources must include the persons of pensionary age and youths up to age 16 that are working in state enterprises, institutions, cooperative and social organizations, and the public sector of kolkhozes. Along with that, the possibility of drawing into the public sector the population at the age capable of working that is employed in the domestic and private subsidiary sector must be more fully considered.

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To substantiate the general economic ratios of development of the national economy, the Methodological Instructions contain the procedure to draft in the five-year plan the balance of the national economy of the USSR and the union republics and the intersector balance for production and distribution of output. It is recommended in it that all indicators of these balances be drafted by years of the five-year period, ensuring the balance of indicators of total social reproduction.

To coordinate and substantiate the major economic ratios in the national economy, it is recommended that alternative estimates of the basic national economic indicators be made. Just as before, the procedure contains methods for determining the rates and ratios of development of the national economy and analyzing the sector structure of social production and the basic factors of expanded socialist reproduction. Given in this section are methods for calculating the balance of production, consumption and accumulation of the social product; the balance of production, distribution, redistribution and utilization of national income; and the balance of national wealth (balances of fixed and working capital). Indicators of the balance of the national economy are drafted by basic sectors and in the social aspect by years of the five-year period.

The balance of the national economy of the union republics provides a comprehensive description of reproduction of physical, labor and financial resources with regard to economic features. Estimates by union republics are used to substantiate national economic plans for development of their economy and efficient division of labor among them, and for analysis of general economic ratios on a territorial profile.

The Methodological Instructions contain for the first time basic provisions for planning scientific and technical, economic, social and regional programs. In planning, said L. I. Brezhnev at the October (1980) Plenum of the CPSU Central Committee, "extensive use of the method of special-purpose programs has to be made. Each such program must be a substantiated plan, supported by precise estimates, of measures aimed at end results and full resolution of a specific problem. It is essential that the stages and sequence of problems to be solved be defined in the program. And of course there must be a program management system that clearly establishes the line of responsibility for each section of work and that assigns the necessary rights. Without all of this, a program is no program, but a sum of good wishes." In the scientific and technical programs, tasks for achieving final aims and technical and economic results are provided for, and schedules and stages for carrying out the work are defined--from scientific research to practical realization, including organization of series production of new products and introduction of progressive technology. In the new five-year plan, a food program of paramount importance to raising the national welfare will be drafted in accordance with the decision by the CPSU Central Committee Politburo. Among the special-purpose comprehensive programs will be programs to reduce employment of manual labor in industry and other sectors of the national economy; to raise the efficiency of use of fuel and energy; to speed up development of the oil and gas industry in Western Siberia; to ensure full utilization of the basic types of mineral resources and others.

Defining comprehensive measures for social development is of major importance in drafting long-term plans. In the decree on improving planning, it was noted that they must be drafted at all levels of economic management--for the USSR as a whole,

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the union and autonomous republics, krays, oblasts, cities and rayons, and for ministries, departments, associations, enterprises and organizations. These measures involve improving labor conditions, raising workers' skill levels and the population's educational and cultural level, improving housing and living conditions, health services and others. Plans for these measures must be compiled in coordination with tasks for development of production, capital construction and raising the efficiency of them. Programs to solve major regional problems and further develop territorial-production complexes are drafted to efficiently site productive forces and make full and efficient use of resources.

Special-purpose comprehensive programs are a component of state plans for the country's economic and social development. They must be coordinated with the physical, labor and financial resources and capital investment provided for by state plans. The programs are drafted by basic indicators--labor productivity, production cost and the technical and economic level of output. Among the indicators, the resources and capital investment needed to successfully accomplish the program are planned. Comprehensive programs are compiled on the basis of profound analysis of the proposed problems with regard to the possibility of meeting the public demand for the product contemplated by the program.

The procedure for planning new equipment has been significantly revised. In the plans for USSR economic and social development, it is necessary to provide for further expansion of scientific research that ensures improvement of the scientific and technical base, an increase in the technical level of production and output and the mechanization and automation of production processes, and creation of new types of products and advanced industrial processes.

In drafting the five-year plan and the main directions of development for the ten-year period, extensive use is made of the materials of the Comprehensive Program of Scientific and Technical Progress and its socioeconomic consequences for the 20-year period drafted by the USSR Academy of Sciences, the USSR State Committee on Science and Technology and the USSR Gosstroy. Basic tasks on carrying out scientific and technical programs and on the development, assimilation and introduction of new highly efficient industrial processes and types of products, as well as normative provisions for formation of a single fund for development of science and technology (for ministries) are approved for ministries, associations and enterprises in the five-year plan.

The introduction of computers permitting automation of management processes is of great importance to improving production management in associations and enterprises. In long-term and annual plans, it is necessary to provide for building up capacity of general-purpose computers, computing centers and automated systems for information management and processing.

The main direction in improving the material and technical base for production is technical reequipping of associations and enterprises. The Methodological Instructions recommend that ministries and departments of the USSR and councils of ministers of the union republics in the five-year plan draft plans for technical reequipping of operating enterprises aimed at further development of production, improvement of the use of production capacity and fixed capital, and raising product quality and production efficiency. The appropriate measures must be implemented without expanding the existing production areas of the enterprises. Comprehensive

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development of enterprises and provision of proportional development of sectors and subsectors of production with regard to their development in the long-term have to be allowed for in the reequipment plan.

The new Methodological Instructions contain a procedure for drafting a stable five-year plan for capital investment with distribution by years, balanced with physical, manpower and financial resources, resources of industrial and power equipment, and with the capacities of construction organizations. Commissioning of fixed capital and production capacities and facilities, including an increase in capacity through reequipment and remodeling of operating enterprises will be approved for USSR ministries and departments and councils of ministers of the union republics as basic indicators on capital construction in the five-year and annual plans. Instead of the volume, a limit on capital investment and construction and installation work must be approved as the maximal limit of resources needed to ensure planned commissioning of capacities and facilities and formation of normative reserves. In the process, the limits on capital investment and construction and installation work are not subject to reapproval. The role of the limit as a stable resource indicator for the entire period is thereby emphasized more strongly.

Under the conditions when the five-year plan is the basic form of planning capital investment, the role of title lists is enhanced substantially. While until recently title lists were refined annually when annual plans were compiled, beginning with the 11th Five-Year Plan they become fixed planning documents for the entire period of construction, binding on customers, contractors, planning, financial, bank and supply agencies, and suppliers of equipment and structures. Based on them, continuity of capital construction plans is assured; they facilitate raising the responsibility of customers and contractors for expeditious commissioning of production capacities and facilities. Title lists for the entire period of construction with distribution by years are drafted on the basis of lists of enterprises and structures being newly constructed, as well as enterprises planned for expansion and remodeling, limits on capital investment and construction and installation work, and construction plans, estimates and time norms. Defined in them are the indicators for the major facilities and priority projects included in the construction job as well as the work volume and completion schedules. Tasks on commissioning of capacities and fixed capital and volume of capital investment and construction and installation work by executors are established in the title lists.

According to the Procedure, changes to title lists can be made only when projects are revised to use more modern equipment. In the process, refinement of the estimated cost and capital investment is permitted within the limits on capital investment and construction and installation work established for the appropriate year for the USSR ministries and departments and the councils of ministers of the union republics. To create favorable conditions for expanding work on reequipment and modernization of enterprises, managers of production associations (enterprises) have been given the right to approve title lists for reequipment irrespective of the total estimated cost of the work.

Considerable changes have been made to the procedure for planning planning and surveying work. Beginning with the 11th Five-Year Plan, five-year plans will be drafted to carry out this work. In addition, a new section has been introduced--development of network of bases of materials and equipment for planning and surveying organizations in coordination with capital construction plans. Provided in it are tasks

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for planning organizations on raising the technical and economic level of plan solutions--growth in labor productivity, increasing the capital-output ratio, saving physical resources in planned enterprises, as well as indicators describing a reduction in labor-intensiveness and cost of construction. To raise the quality and ensure full performance of all planning work, it is customary for the estimates among the customers and planning and surveying organizations to be made for completely finished plans for construction of enterprises, priority projects, phases and facilities.

New in the construction industry is the shift by construction organizations starting in 1981 to planning by indicators of final results of their activity. Among the basic indicators to be approved in plans for contracting construction organizations are the commissioning of production capacities and facilities and the volume of commodity production.

Also defined in the Methodological Instructions is the procedure for drafting the plan for the volume of commodity construction production, that is, the value of construction and installationwork on enterprises turned over to the customer, phases, priority projects and facilities prepared for output of products or rendering of services. The indicator of total volume of contract work is maintained as estimated in defining construction organization needs for materials and equipment and in calculating the wage fund, working capital and credit. The experience of the operation of a number of union-republic construction ministries, union republics and main administrations for construction under the new conditions confirms that this system facilitates raising capital investment effectiveness, reducing unfinished construction volume, accelerating facility commissioning and concentrating physical and manpower resources at projects under construction.

To coordinate capital construction plans with construction organization capacities and manpower resources, there is a procedure in them for the councils of ministers of the union republics to work up drafts of five-year and annual plans for contract work to be carried out by union-republic ministries.

The needed refinements and supplements stemming from the adopted normative documents on questions of improving the economic mechanism have been made to the Methodological Instructions for Drafting State Plans for USSR Economic and Social Development. However, they do not reflect all the specific features of planning for the individual sectors, republics and regions. Therefore, the USSR ministries and departments and union-republic state planning agencies, guided by the new Methodological Instructions approved by the USSR Gosplan, must make the necessary refinements and additions to the prevailing sector and republic methodological instructions.

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INTRODUCTION OF NEW TECHNOLOGY

ROLE OF AMORTIZATION IN TECHNICAL MODERNIZATION WEIGHED

Moscow VOPROSY EKONOMIKI in Russian No 1, Jan 81 pp 34-44

[Article by V. Senchagov and V. Ostapenko: "The Significance of Amortization in Technical Modernization"]

[Text] The draft of the CPSU Central Committee for the 26th Party Congress, "Basic Directions for the Economic and Social Development of the USSR for the Years 1981-1985 and for the Period up to 1990," poses the task of increasing the effectiveness of social production in all branches of the national economy on the basis of its comprehensive intensification.

The effectiveness of the national economy and its dynamic growth depend to a great extent on the well-coordinated operation of the enterprises and production associations. One of the important tasks of the functional and branch management organs is ensuring those conditions for activity for enterprises and associations under which they would strive to increase production on the basis of intensive factors, the implementation of a rigid economy mode, and the maximum use of internal economic reserves. The economic prospects for a functioning enterprise as well as the stable growth of the entire national economy are connected to a considerable degree with the scales and effectiveness of the technical reequipping of production.

The necessity for the accelerated transition to intensive forms of reproduction with a limitation on expenditures for the construction of new enterprises and the expansion of those in operation is caused by a number of factors. The first of them is nonconformity between the achievements of scientific and technical progress and the technical level of the fixed capital of many shops and enterprises which was introduced prior to 1970. This is caused by the fact that for a long time the main portion of capital investments in industry was directed toward the construction of new enterprises and the expansion of those in operation. Thus, in 1978 for 26 industrial ministries the share of investments for the technical reequipping and modernization of enterprises was only 20.7 percent of the total volume of capital investments. The coefficient of retirement of fixed capital of industry was reduced from 2.2 percent in the Eighth Five-Year Plan to 1.8 percent in the Ninth Five-Year Plan and 1.4 percent--in 1976-1979, including their assets portion--from 2.4 percent in the Ninth Five-Year Plan to 2.2 percent in 1976-1979.[1] For individual branches of industry, the wear of the fixed capital grew in connection with this. For example, for the Ministry of the Coal Industry of the USSR the wear of the fixed production capital increased from 35.6 percent in 1974 to 40.6 percent in 1979, for the Ministry of Ferrous Metallurgy USSR--respectively from 31.3 percent

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to 38.8 percent, and for the Ministry of Tractor and Agricultural Machine Building--from 32.6 to 36.7 percent.

The expanded reproduction of fixed capital at many enterprises occurs for now primarily through the construction of new shops and the expansion of those in operation, while proper attention is not devoted to the replacement of worn-out and obsolete equipment. Therefore, the share of the worn-out and obsolete equipment whose normative period of service expired long ago is still great. For industry as a whole, the share of machine tools 20 years old and higher is: for weaving machines--more than 14 percent and for paper-making machines--26 percent. At the Moscow plant for jig-boring machines, in 1975 37 percent of the park of metal-cutting and forging-and-pressing equipment consisted of machine tools whose age exceeded the normative service periods, and in 1979 such machine tools were 40 percent. Of the total park of metal-cutting equipment installed at the "Kalibr" Moscow tool plant, 43 percent consisted of machine tools more than 20 years old. The large quantity of obsolete equipment at individual enterprises is holding back their transition to new technological processes and is reducing the rate of growth in the productivity of labor.

The second factor which causes the necessity for the accelerated technical reequipping of operating production is the slowing down in the increase of the number of workers in industry. In 1961-1970 the mean annual increase in the number of workers and employees in industry was 900,000 people, and in 1971-1979--540,000 people. The trend which has been noted is intensifying even more in the Eleventh Five-Year Plan. Meanwhile, as experience shows, in working out the drafts of plans the industrial ministries, as formerly, are emphasizing the increase in the number of workers, as a result of which the calculations of work force requirements greatly exceed available capabilities.

One of the main reasons for disrupting the times for putting newly introduced capacities into operation as well as for the idling of equipment consists exactly in the fact that often the expansion of operating enterprises and the construction of new ones are accomplished without sufficient consideration of the balance of labor resources and the level of workers' qualifications. Obviously, the limitation on the expansion of operating enterprises and the construction of new ones with the simultaneous increase in the scales of technical reequipping and modernization will be an important means for the full mechanization of technological processes and the freeing of workers occupied in manual labor.

The third factor which causes an increase in the role of technical reequipping of operating production is the necessity for the constant renewal of production and the raising of its quality. With the acceleration of technical progress, the enterprises should improve the technical base in good time so as to switch over to the output of new models and types of products quickly. Here, technical reequipping does not mean the isolated replacement of equipment which is worn out. It should be conducted on the basis of the full replacement of the worn-out and obsolete equipment and should be oriented on improving the technology of production, the introduction of a system of machines for the full mechanization and automation of production, and a reduction in manual labor and auxiliary work. All this imposes serious requirements on machine building. In a speech at the October (1980) plenum of the CPSU Central Committee, L. I. Brezhnev noted: "In the next five-year plan special attention should be devoted to a...rise in machine building. In essence, tasks in renewing fixed capital and the technical reequipping of various spheres of the national economy will face us more and more acutely."

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In particular, the implementation of measures to accelerate the replacement of models of machines being produced and to improve their quality characteristics is required. At the same time, a reduction in the times for the replacement of models is not an end in itself. It is important that each subsequent generation of machines and equipment be higher than the preceding one in its consumer parameters and create conditions for the steady growth in the public productivity of labor.

We should mention one more factor, the fourth, which determines the necessity for the technical reequipping of production and the current improvement of fixed capital--the creation of conditions for a more uniform cycle in the reproduction of the fixed capital of operating enterprises. Considerable fluctuations in the volumes of capital investments and, accordingly, the introduction and retirement of fixed capital by years of the five-year plan is observed in many enterprises. In the final analysis this leads to the nonuniform growth in volumes of production, productivity of labor, and profit, and hinders the introduction of stable economic norms for the distribution of profit, amortization deductions, the formation of the wage fund, and so forth. This is why, along with the expansion of the scales of technical reequipping (that is, the full replacement of worn and obsolete equipment) at some enterprises it is expedient to increase the share of investments for the current improvement of fixed capital (individual replacement and modernization of machine tools, the conduct of organizational and technical measures) at other enterprises at which the main portion of the equipment is not yet physically worn out. Under such conditions, operating enterprises will be able to maintain the material and technical production base at the contemporary level and thereby increase the output of production, reduce its cost price, and increase the productivity of labor.

In the Eleventh Five-Year Plan it is intended to renew in time the operating fixed capital, expand considerably the scales of technical reequipping and modernization of enterprises, and reequip them with new, highly-efficient equipment. The changeover to intensive forms of reproduction of fixed capital on the basis of technical reequipping of production is connected with the improvement of all elements of the economic mechanism and, in particular, the system of amortization deductions which, in greater measure than other cost levers, reflect the real-physical circulation of fixed production capital and the indices of the technical status of the funds (period of service, ratio between their active and passive parts, wear and obsolescence, operating conditions of the equipment, and so forth). Therefore, an economically substantiated system of amortization deductions serves as an important economic lever for influencing the functional organs of management and branch ministries for intensification of the reproduction of fixed capital and raising the technical level of production.

Such influence is accomplished primarily by establishing norms for amortization deductions[2] which reflect economically expedient service periods of the means of labor and, thereby, are the initial norms for planning the reproduction of fixed capital, distributing capital investments, and forming the production program for machine building. The effectiveness of the system of amortization deductions depends to a great extent on the proportions of their distribution among the forms of reproduction of the fixed capital as well as between individual parts of social production (enterprises, production and industrial associations, and ministries).

Thoroughly substantiated depreciation norms should predetermine the proportions of fixed capital reproduction, in particular the scales and shares of technical

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reequipping and modernization. However, at present the planned volumes for technical reequipping and modernization are established without sufficient consideration of the normative periods of service. As a result, the planned and actual scales of technical improvement of industry's fixed capital and the volumes of withdrawal of obsolete fixed capital far from correspond to the normative service periods and amortization norms for renovation. Thus, the coefficient of retirement of fixed capital in 1979 in industry was 1.4 with a mean amortization norm for renovation of 4.8 percent. For individual ministries the coefficient of withdrawal of fixed capital was less than the mean norm for amortization for renovation by 3-6-fold.

Table 1

	Mean Amortization Norm for Renovation of Fixed Production Capital (in percent)	Coefficient of Retirement of Fixed Production Capital (in percent)
Ministry of Power and Electrification USSR	3.2	0.5
Ministry of Chemical Industry	5.3	1.0
Ministry of Ferrous Metallurgy USSR	4.4	0.8
Ministry of Heavy and Transport Machine Building	4.3	0.9
Ministry of Machine Tool and Tool Building Industry	4.3	1.2
Ministry of Instrument Making, Automation Equipment, and Control Systems	5.6	1.5
Ministry of Pulp and Paper Industry	4.2	0.8
Ministry of Light Industry USSR	4.6	1.8
Ministry of Food Industry USSR	4.5	1.8

With the expanded reproduction of fixed capital the retirement coefficient (in accordance with the normative periods of service) is always less than the mean norm of amortization for renovation, which is caused by the following. The overall amortization fund for renovation is made up of deductions from fixed capital which are introduced in the base period and of deductions from the cost of the increase in fixed capital in the planned period while newly introduced funds are subject to replacement beyond the limits of the planned year. With consideration of this, capital investments for compensation for the retirement of fixed capital should be less than the sum of amortization deductions for renovation.

The retirement norm which corresponds to the established service periods and the rates of introduction increase can be determined on the basis of economic-mathematical models which reflect the natural interconnection between the indicated indices.[3] According to our calculations, under contemporary conditions the retirement coefficient should be at least 2.9-3.1 percent as opposed to 1.4 percent in 1979. Here the actual service periods of the means of labor in industry will conform to the normative ones. A comparison of the indicated coefficient with the norm

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of amortization deductions shows that compensation for retirement of fixed capital should use 70-75 percent of the amortization deductions for renovation in industry while only 30-35 percent is expended.

A number of economists, being guided by data of the processing industry in the United States in which the retirement coefficient was 4.5 percent, propose planning retirement on larger scales in comparison with our calculations This is hardly justified. In the processing industry of the United States the rates of increase in introducing fixed capital are lower than the increase in introducing fixed production capital in our country. Meanwhile, a study of the interconnection of the fixed capital reproduction indices indicates that other conditions being equal, the retirement coefficients are reduced accordingly with an increase in the rates of introduction of fixed capital.

The question of increasing the retirement coefficient of fixed production capital and accelerating the replacement of worn-out and obsolete equipment should be solved with consideration of branch peculiarities. For example, in agriculture the retirement coefficient of fixed capital was 4.1-3.9 in 1975-1978 (without considering the cost of retiring livestock), that is, it was twice as high as in industry. To a certain extent, this is connected with the special features in the operation of equipment in agriculture and the great dependence of production on the natural and climate conditions as well as with the more rapid wear of the fixed capital.

Consideration should also be given to the influence of the inefficient conditions for operating equipment in agriculture which, in turn, is caused by shortcomings in the organization of the repair base as well as, in a number of cases, by the economically unsubstantiated construction of big livestock-breeding complexes and the insufficient qualifications and turnover of machine operator personnel. Each year, 11-13 percent of the operating tractor fleet is dropped from accountability in agriculture (the norm which we have calculated is about 9-10 percent). As a result, in 1971-1975 78.5 percent new ones were sent to replace retired tractors, and in 1976-1978--82.4 percent. Approximately the same situation is typical of grain-harvesting combines.

Serving as a large reserve for increasing resources to accelerate the technical reequipping of branches of industry is the establishment of the correct proportions between that portion of the amortization deductions which is intended for restoration and that which is going for major overhaul. The mean norm of amortization deductions intended for major overhaul was reduced somewhat (from 3.2 percent in 1974 to 3 percent in 1979) as a result of the review of norms for amortization deductions conducted in 1975. However, the fixed capital retirement coefficient in industry was not increased in the Tenth Five-Year Plan, but decreased, as a result of which the relative scales of expenditures for major overhaul remained, in essence, unchanged. Thus, in 1979 they were 2.9 kopecks per ruble of cost of fixed production capital in industry as opposed to 2.8 kopecks in 1974, and in some ministries (Ministry of Petroleum Refining and Petrochemical Industry USSR, Ministry of Nonferrous Metallurgy USSR, Ministry of Food Industry USSR, Ministry of Meat and Dairy Industry USSR) expenditures on repair are greater than the amortization funds deducted for these purposes.[4]

Considering the low effectiveness of expenditures above the norm for major overhaul in comparison with expenditures on the production of new equipment, it is expedient

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to switch a portion of the resources according to plan from this sphere to the creation of new machinery and equipment. Here, we should envision a gradual reduction in the norms for amortization deductions for major overhaul and, accordingly, an increase in the norms for amortization deductions for renovation.

With the next review of the norms for amortization deductions, it is also necessary to establish more substantiated relationships between amortization deductions for major overhaul of buildings and the active part of fixed capital. The employment of operating norms for amortization for major overhaul showed that they are insufficiently substantiated for individual types of fixed capital. For example, actual expenditures for the major overhaul of industrial buildings in 1979 exceeded 1.5-fold amortization deductions for these purposes while expenditures on the major overhaul of machinery and equipment were 18 percent less than the credited amortization.

Determination of the correct proportions in the use of resources for various forms of reproduction of fixed capital and ensuring the direction of expenditures, first of all, for technical requipping, depend to a great extent on improvement in the planning of fixed capital reproduction. The decree of the Central Committee CPSU and the Council of Ministers USSR, "On improving planning and strengthening the influence of the economic mechanism on raising the effectiveness of production and the quality of work," contemplates capital investments for the development of branches for material production for the planned increase in the volume of goods and services in the drafts of five-year plans. This creates conditions for planning operating production and new construction as a single whole.

At the same time, it is important not only to determine the volumes of new construction, but also to balance all expenditures for the reproduction of fixed capital and to optimize their proportions. Needed for this, obviously, is a single plan (or integrated program) for the reproduction of fixed capital, on the basis of which plans for capital investment (by directions), modernization and repair of fixed capital, balances of equipment and spare parts, and so forth would be worked out. On its basis, it will be possible to work out more substantiated norms for amortization deductions for renovation which, in large measure, should consider contemporary achievements of scientific and technical progress and create possibilities for the timely replacement of obsolete means of labor.

A general one-time review of the norms of amortization deductions permits the more complete reflection of new trends in the reproduction of fixed capital. The norms for amortization deductions become state-wide norms which are mandatory for working out a number of most important sections of the national economic plan (for capital construction, production of machine-building products, the development of science and technology, and others). Here, the system of amortization deductions should reflect the differences in the rates of scientific and technical progress in individual branches. Probably, in a number of branches (in the period between general reviews of norms for amortization deductions) it is expedient to envisage an increase in the established limits (for example, by 10-30 percent) of the norms for amortization deductions for renovation for the accelerated renewal of production's technical base. This can be done through the corresponding reduction in amortization deductions for major overhaul. In essence, such a measure will signify a redistribution of amortization between renovation and major overhaul within the limits of that same general amortization norm, that is, without a change in cost price and profit.

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The role of amortization deductions in the technical reequipping of production depends not only on their level and the amounts of the amortization fund, but also on the order of the latter's distribution and use.

In 1979, the industrial enterprises deposited about 70 percent of the renovation deductions in the bank to finance capital investments. A portion of this sum is directed toward the financing of capital investments of the same enterprises where it was credited, and the other part--to finance the capital investments of enterprises which do not have enough of their own amortization deductions and other sources to accomplish the plans for capital investments. Approximately seven percent of the amortization deductions for renovation are centralized on a state-wide scale and are used to finance capital investments.

In evaluating the nature and scales of redistribution of amortization deductions, it can be noted that the predominant form is redistribution within the framework of a subbranch (main administration, VPO [all-union production association]), to a much lesser degree--between enterprises of various main administrations (VPO's) of ministries, and to an even lesser extent--through the state budget through channels of interbranch turnover. With the changeover to the financing of capital investments through internal resources which remain at the disposal of the branch, centralization of amortization deductions for renovation increased. Thus, for eight industrial associations of the Ministry of Instrument Making, Automation Equipment, and Control Systems, according to the plan for 1972 the sum of these resources was 4.5 million rubles, and according to the plan for 1979--21.8 million rubles.

In addition to direct deposits to the bank to finance capital investments, about 19 percent of the renovation deductions are directed to the fund for production development. As calculations have shown, this is insufficient to compensate for the retirement of fixed capital in accordance with the normative service periods. Thus, in 1979, for 26 industrial ministries there were 1.4 kopecks of production development fund per ruble of cost of fixed production capital. The norms for deductions for the production development fund are established empirically, without correlation with the status of fixed capital at a given enterprise.

Proceeding from the main function of amortization deductions--to ensure continuity in the circulation of fixed capital--it is expedient to use them primarily to replace resources which have been retired through the technical reequipping and modernization of production. Therefore, it is important to utilize in full measure the procedure for the use of amortization deductions envisioned by the decree of the CPSU Central Committee and the USSR Council of Ministers on improving the economic mechanism. From 10 to 50 percent of the deductions intended for renovation are directed in accordance with established norms to the production development funds, and the remainder--first of all for the technical reequipping and modernization of enterprises according to the plans for capital construction.

Here, we should stress the active role of enterprises and associations in shaping the plan for capital investments for technical reequipping. Thus, measures for technical reequipping must be worked out and approved independently by production associations (enterprises) and expenditures for their conduct in accordance with the calculations and recommendations of the production associations (enterprises) should be included in full measure in the capital construction plan of ministries and departments. The latter provide the enterprises on a priority basis with the necessary

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capital investments, financial resources, and contract work within the bounds of the limits established by ministries and departments in the five-year plans (with distribution by years).

It is evident that it is expedient to work out a system of differentiated norms for deductions from amortization for renovation in the production development funds of associations and enterprises. Here, it is important to select the criterion for determining deduction norms for a given fund which are differentiated by enterprises. In our opinion, the norms should be calculated depending on the norms for retirement of fixed capital which are determined with consideration of its established service times, age, wear, and obsolescence. At the same time, retirement norms should be one of the basic tools in planning technical reequipping and modernization.

To direct amortization deductions which are not included in the development fund for technical reequipping and modernization first of all, it probably is necessary to change to the formation of specially earmarked funds for financing capital investment: the fund for financing capital investments of operating enterprises (at the VPO level) and the fund for financing new construction (at the ministry level). The funding mechanism for the distribution of financing resources for technical reequipping and modernization of associations (enterprises) has a number of advantages in comparison with those in effect now. The principal one is that the size of the fund is directly coordinated with the cost-accounting results of work. This will eliminate its kind of automatism in financing previously established volumes of capital investments and will raise the responsibility of each management element for their efficient use.

A new procedure for forming equipment balances is required for the economic maintenance of the named funds. Economically optimum periods of service in accordance with which equipment for the replacement of that worn out or obsolete should be allocated on a priority basis should form the basis of the production and distribution of equipment. This will permit a gradual change in the practice for the distribution of resources which has evolved where financial resources are directed toward technical reequipping last of all.

The procedure for distributing not only renovation, but also amortization deductions intended for major overhaul exerts an influence on increasing the effe eness of expenditures for the reproduction of fixed capital. Analysis has show .hat in 1979, in industry 93.4 percent of the amortization deductions expended were directed toward financing major overhaul (see Table 2).

The conditions for major overhaul at the enterprises differ, but the amortization norms for it are established as mean values. The balancing out between the size of the amortization deductions and the enterprises' actual requirement for funds for major overhaul is now ensured by the uncompensated redistribution of amortization deductions. Ministries and industrial associations have been granted the right to create reserves of amortization deductions which are intended for major overhaul (in an amount of up to 15 percent of the total sum of these deductions) for use in those production associations (enterprises) which have insufficient internal assets for major overhaul (formerly, it was permitted to redistribute an amount of up to 10 percent of these sums). In 1979, for industry the amortization deductions to be redistributed for major overhaul were 15.6 percent of the total sum of deductions for it (including the remainder carried over from 1978). Suggestions of even greater scales of redistribution of amortization deductions for major overhaul are known.[5]

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Table 2

	1975	1979
Expended, altogether	100	100
including:		
to finance major overhaul	92.8	93.4
to acquire new equipment to replace retired equipment whose repair is ineffective	1.0	1.0
transferred as a change in purpose of amortization.	2.4	2.0
other expenditures	3.8	3.6

In our opinion, the uncompensated redistribution of amortization deductions for major overhaul does not contribute to the development of enterprises' cost accounting and to a limitation on repair which has low effectiveness. Enterprises which have obsolete fixed capital can systematically obtain additional funds to conduct major overhaul. These funds are not reflected in the cost price of production; therefore, its level at these enterprises will be lower than at enterprises which operate new equipment. In this way, the effect of old equipment is increased artificially and the incentives for its replacement are weakened. Moreover, the limits between current repair, expenditures on which are included directly in the cost price of production, and major overhaul are arbitrary. Therefore, individual enterprises artificially reduce the volumes of current repairs (and consequently, the cost price of production) and increase the volumes of major overhaul, obtaining deficient funds through the redistribution of amortization.

In this connection, the question arises concerning reinforcement of the cost accounting principles for the use of amortization deductions for major overhaul. In our opinion, the role of amortization for major overhaul is increased if the deductions necessary to finance the planned volumes of repair are accumulated in a special cost-accounting fund from which funds can be redistributed between associations and enterprises, but on a reimbursable basis.

Simultaneously with the working out of questions in the redistribution of amortization deductions for major overhaul, there is a requirement to substantiate their share which may be directed for the technical requipping and modernization of production without detriment to the maintenance of the fixed capital in a serviceable condition. Under conditions of the expanded reproduction of fixed capital, the amounts of amortization deductions for major overhaul exceed actual expenditures for these purposes each year since amortization is credited not only from fixed capital which is available at the beginning of the planning period, but also from the value of its increase in the planning year while major overhaul of this capital is required after several years. The same regularity is displayed here as with the formation of the renovation fund.

To determine an economically substantiated sum of amortization deductions at the levels of the national economy and the branch which can be directed (without detriment to effective major overhaul) for financing the replacement of equipment, it is expedient to use economic-mathematical models which reflect the interconnection of

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the fixed capital reproduction indices: rates of increase in introduction, retirement coefficients, normative service periods, quantity of repairs, duration of repair cycles, cost of repair in accordance with norms of the system for planned preventive maintenance. On the basis of these data, we can calculate economically substantiated proportionate expenditures for major overhaul. A comparison of these proportionate expenditures with the mean norm of amortization for major overhaul permits a determination of the indicated portion of amortization deductions.

At the level of production associations (enterprises) the calculation of economically substantiated expenditures for repair should be defined concretely with consideration of a differentiated approach to the selection of objects for repair and modernization. On the one hand, it is expedient to develop and improve the major overhaul and modernization of fixed capital elements whose age is less than the normative periods of service. The basic ways of improvement include: employment of progressive systems for the organization of machine and equipment repair which ensure an increase in the between-repair period of their operation; centralization and specialization of repair; creation of a specialized industry for spare parts and modernization units; adjustment of the delivery of spare parts to users with consideration of efficient norms. On the other hand, it is necessary to curtail the major overhaul of the means of labor whose age exceeds the normative service periods and to replace them with new, technically advanced machinery and equipment in an accelerated manner.

However, frequently enterprises are not interested in the replacement of operating equipment. This is caused by a number of reasons. The first group of reasons is connected with the fact that new equipment sometimes does not have obvious economic advantages in comparison with that being employed and, in addition, it is more difficult to maintain and repair. In many cases, the new equipment is not distinguished by basic innovation and is "inserted" in long-obsolete production technology which does not provide economy of labor resources. For example, machine tools are still oriented toward obsolete cutting technology, as a result of which many millions of tons of metal are lost. A significant savings in all types of resources can be ensured through the conversion of machine building to a new progressive and less resource-intensive technology which is based on methods of plastic deformation, welding, and casting.

It is necessary to realize in full measure the complex of measures envisioned by the decree of the CPSU Central Committee and the USSR Council of Ministers which was adopted in 1978 concerning the further development of machine building. Specific tasks have been posed for the machine builders: to set up the production of machinery, equipment, instruments, and means of automation with a productivity at least 1.5-2 times higher in comparison with the level of 1975 and to conduct measures to increase their periods of service to first major overhaul. Qualitatively new requirements for the development of machine-tool building are defined in the decree of the CPSU Central Committee and the USSR Council of Ministers, "On a significant rise in the technical level and competetiveness of metal-working, casting, and woodworking equipment and tools," which was adopted in 1980. The Ministry of Machine Tool and Tool Building Industry has been assigned the task for a sharp increase in the production of the most progressive types of equipment, in particular, through a reduction in the output of obsolete types of machine tools and machinery.

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Another group of reasons for the lack of interest of enterprises in the timely replacement of equipment is caused by frequent disruption of economically efficient relationships between improving the use qualities of the new equipment and the increase in wholesale prices. Thus, according to data from a selective investigation by the TsSU [Central Statistical Administration], of 74 types (models) of equipment whose output was set up by the Ministry of Chemical and Petroleum Machine Building in 1975-1977, the increase in wholesale prices in comparison with the equipment being replaced outstripped the increase in its productivity for 37 types; in the Ministry of Machine Tool and Tool Industry an increase in the cost of a unit of capacity was observed for 15 out of 37 models of equipment, and in the Ministry of Machine Building for Animal Husbandry and Fodder Production--for 8 out of 16, and so forth.[6] The increase in wholesale prices per unit of useful effect causes an increase in depreciation deductions per unit of production and, consequently, an increase in its cost price.

Elimination of the reasons mentioned will permit accelerating the renewal of machinery and equipment. At the same time, it is necessary to caution against a simplified understanding of the problem of renewing fixed capital. The obsolescence of fixed capital, which steps forth as one of the main indicators in calculations of expedient scales of elimination of the means of labor, should be determined on scales of the national economy and not of an individual enterprise or even a branch. A machine which has become obsolete for a given enterprise may be operated effectively at another enterprise of the given branch or even at enterprises of other branches.

Meanwhile, at a number of enterprises equipment is often written off as scrap under the guise of renewal of fixed capital, its age being much less than the normative service periods. One of the reasons for such a write-off is that a considerable part of the financial losses from incomplete amortization of fixed capital pertains to the authorized capital and does not affect the cost-acounting indices of the enterprises' operation.

Evidently, it is expedient to discuss ways to solve this question. First, we can envision a differentiated procedure to compensate the financial losses from incomplete amortization with consideration of the reasons for writing off the means of labor which have been retired. If the financial losses are formed for reasons which are independent of the enterprise (as a result of modernization, change in specialization in accordance with the decision of a higher organization, and so forth),they may relate to the authorized capital. In all other cases, profit should be reduced by the sum of the indicated financial losses, which will force the enterprises to display a prudent attitude toward fixed capital. Second, in order to avoid a sharp decrease in profit in individual months and years, financial losses from incomplete amortization can be written off to the results of economic activity gradually, piecemeal.[7] Obviously, first these and other methods should be approved and then the most effective of them should be used in economic practice.

The realization of these two directions is possible with an improvement in the accounting of fixed capital and, especially, in the recording of the reasons for its retirement. Ministries and departments and Gossnab USSR should also improve the organization of the redistribution and sale of equipment which is subject to replacement but, in its technical and economic characteristics, can be used effectively at other production sectors.

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Economically substantiated norms for amortization and normative service periods should become the methodological basis for determining the scales of compensation for retired fixed capital in the national-economic plan. It is also necessary to improve the mechanism for distributing amortization deductions which, in greater measure than now, should be directed toward compensation for retired fixed capital of operating enterprises. All this will permit raising their role as an economic lever in the technical reequipping of production.

FOOTNOTES

1. According to the data of some economists, in particular Y. B. Kvasha, which are presented in the statistical annuals "Narodnoye khozyaystvo SSSR" [The National Economy of the USSR], the fixed capital retirement coefficients in industry understate somewhat the amount of the retirement. The author indicates the following reasons for understatement: a growth in the price index for capital investments, discounts in the price of equipment for obsolescence with overestimates in 1962 and 1972, and partial write-off of fixed capital elements to be eliminated with the modernization of enterprises" (see Y. B. Kvasha, "Faktor vremeni v obshchestvennom proizvodstve. Ekonomiko-statisticheskiye ocherki" [The Time Factor in Social Production. Economic-Statistical Essays]. Izdatel'stvo "Statistika," 1979, p 35.

2. As a result of a review of norms for amortization deductions in 1975 and of changes in the type structure of fixed capital, the mean amortization norm for renovation increased for industry from 3.7 percent in 1974 to 4.8 percent in 1979. Amortization deductions for renovation in industry comprised 22 billion rubles or 48.5 percent of capital investments in industry in 1979. For individual ministries, the share of amortization in capital investments is even higher: for the Ministry of Timber and Wood Processing Industry USSR--68.2 percent, Ministry of Construction Materials Industry USSR--65.6, and Ministry of Petroleum Refining and Petrochemical Industry USSR--62.4 percent.

3. See, for example, Ya. B. Kvasha, "Accounting for Fixed Capital in Industry" ("Ocherki promyshlennoy statistiki" [Essays on Industrial Statistics]). Under the editorship of A. Ya. Boyarskiy, Moscow, V/O [all-union association] Soyuzorguchet [expansion unknown], 1937, pp 166-175); N. Silonova, "Methodological Questions in Determining Capital Investments for Replacement of Fixed Capital" (VOPROSY EKONOMIKI No 9, 1968, pp 36-46); B. N. Mikhalevskiy, O. M. Gorokholinskaya, G. S. Pashenkova, and Yu. P. Solov'yev, "Estimate and Forecast of Replacement of Retired Fixed Capital (IZVESTIYA AKADEMII NAUK SSSR, Economic Series No 3, 1971, pp 18-31).

4. Calculations show that in industry each unit of equipment is repaired an average of three times and expenditures on one repair comprise 40 percent of the initial cost of the fixed capital. The sphere of repair includes one third of the entire park of machine tools and 11 percent of all workers.

5. See "Methods and Practice in Determining the Effectiveness of Capital Investments and New Equipment." "Sbornik nauchnoy informatsii" [Collection of Scientific Information]. Issue 30. Izdatel'stvo "Nauka." 1979, pp 31-65.

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6. See V. Fal'tsman, "Capacity Equivalent of Fixed Capital" (VOPROSY EKONOMIKI No 8, 1980, p 125.

7. See R. Otsasov, "Improving Cost Accounting Incentives for the Use of Fixed Capital" (VOPROSY EKONOMIKI No 9, 1977, p 47).

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